LAW OFFICES OF
BRONSON, BRONSON & McKINNON
A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS
BANK OF AMERICA CENTER
555 CALIFORNIA STREET
SAN FRANCISCO 94104
415/986-4200

MAILING ADDRESS
POST OFFICE BOX 7358
SAN FRANCISCO, CA 94120

TELEX
824040 KINBR UF
34485 KINBRO SFO
TELECOPY 415/982-1394

FOUNDING PARTNERS
ROY A. BRONSON 1889-1977
EDWARD D. BRONSON, SR. 1893-1977
HAROLD R. McKINNON 1894-1977

444 SOUTH FLOWER STREET
25th FLOOR
LOS ANGELES, CA 90017
213/626-5314
ELECOPY 213/626-7944

912 FORBES STREET
LAKEPORT, CA 95453
707/263-6400

100 PRINGLE AVENUE
WALNUT CREEK, CA 94596-3587
415/945-6660

May 4, 1988

Mr. Roger B. James
California Regional Water Quality Control Board
1111 Jackson Street, Rm. 6040
Oakland, CA. 94607

Subject: Jasco Chemical Corporation. 2189.8210(CEC)

Dear Mr. James,

Enclosed is a copy of a surface water and soil sampling report/proposal for the Jasco facility.

Should you have any questions concerning the report, please do not hesitate to contact me at your earliest convenience.

Sincerely,

James L. Jaffe

JLJ:gg
Enclosure

Wahler Associates

Geotechnical and Water Resources Engineering

~~020144~~

May 6, 1988
Project JCO-104H

Mr. Roger B. James
California Regional Water Quality Control Board
1111 Jackson St. Room 640
Oakland, CA 94607

Subject: Surface Water and Soil Sampling Investigation
Jasco Chemical Corporation
Mountain View, CA. CRWQCB
File Number 2189.8210 (CEC)

Dear Mr. James:

This report has been prepared in response to your April 22, 1988 letter, which was received on April 28, 1988, requesting that a proposal be submitted on the CRWQCB that outlines tasks that should be completed to further characterize the extent of chemicals within the surface water and soil and adjacent to the Jasco facility.

This paragraph responds to statements by the CRWQCB staff in a letter submitted to Mr. Max Anthony of Jasco dated April 22, 1988, that chemicals detected in ponded water with the drainage swale at the rear of the Jasco facility constitute an illegal discharge. The results of a surface water sampling program conducted on April 19, 1988, which will be discussed in detail below, show that the chemicals detected in the surface water flowing from the subsurface drainage pipe into the drainage swale are residual concentrations contained within the subsurface piping system and do not constitute an ongoing illegal discharge. In addition, we also conclude that on April 19, 1988, the chemicals detected in the ponded water at the rear of the Jasco facility did not originate from the collection sump or surface water runoff from the front yard area of the Jasco facility, but were residual concentrations contained within the subsurface piping system. To

1023 Corporation Way, P.O. Box 10023, Palo Alto, California 94303 • Telephone Number (415) 968-6250
Telex Number 4998623

0000144

remediate this situation, the subsurface piping will be flushed with deionized water. Water samples will be taken at the beginning and after the flushing to verify that the procedure was effective. This procedure, along with future sampling of the ponded water, will verify that Jasco is currently operating with good housekeeping practices. Each of the water samples will be analyzed for EPA priority and non-priority purgeables, including MEK, acetone, and xylenes using EPA Method 8240 and for phenols using EPA Method 8040. The flushing and sampling will be performed during the week of May 16 to 20, 1988.

This section of the report addresses the seven tasks outlined on pages one and two of your April 22, 1988 letter. The request as written in the April 22, 1988 letter will be quoted first, followed by a discussion of the type of investigatory work that has been or will be performed which addresses that particular issue. The last part of the report addresses issues discussed on pages two and three of the April 22, 1988 letter.

"1. Procedures to determine if the source of the pollutants detected in the surface and prior to its disposal at the rear of the facility is from the collection sumps themselves or from other areas on-site."

As discussed below, a surface water sampling program conducted on April 19, 1988 has shown that the chemical concentrations in surface water flowing from the subsurface drainage pipe did not originate from the collection sump or the front yard area but are residual concentrations contained within the subsurface piping system.

Four rounds of chemical testing have been performed on surface water samples taken at or around the Jasco Facility. The first two rounds of analytical results were reported to the CRWQCB in the February 17, 1988 monthly status report (MSR). The third round of testing results were reported in the April 15, 1988 MSR. The fourth round of surface water sampling was performed on April 19, 1988. Water samples were taken at seven

locations while it was raining. Water was observed collecting in the sump located in the front yard area. In addition, water was observed flowing out of the subsurface drainage pipe into the drainage swale located northwest of the Jasco facility. The water samples were analyzed for priority and non-priority purgeable halocarbons using EPA Method 8010. In addition, the analytical results for aromatic volatile organics plus MEK and xylenes were also reported. The results of the fourth round of testing are summarized in Table 1 and included in Appendix A. Sample 1AP was taken directly from the outflow of the downspout from the roof that discharges into the drainage swale. Sample 2AP was taken from water flowing directly out of the discharge pipe. Sample 3AP was taken 10 feet west of the discharge pipe. Three samples were taken from water ponded within the drainage swale: 4AP, 50 feet west of the discharge pipe, 5AP, 100 feet west of the discharge pipe, and 6AP, taken at the western limit of ponded water, located 180 feet west of the discharge pipe. The last sample, 7AP, was taken from the collection sump located in the front year area.

The sample taken from the collection sump, 7AP, did not contain chemical concentrations above the method detection limit. Two weeks previous to the samples being taken, the collection sump was drained and cleaned by employees of Jasco. The following chemicals were detected in samples collected from the sump on March 4, 1988, before the sump was cleaned, methylene chloride (MCL) at 0.447 ppm, 1,1,1-TCA at 0.017 ppm, 1,1-DCA at 0.0042 ppm, and carbon disulfide at 0.011 ppm. The samples from the drainage pipe outflow point and the drainage swale, 2AP, 3AP, 4AP, 5AP, and 6AP all contained low concentrations of MCL (0.021 to 0.073 ppm) 1,1,1-TCA (0.024 to 0.047 ppm) and 1,1-DCA (0.0039 to 0.008 ppm).

Examination of the data from Table 1 reveals that the same three chemicals were detected in all of the samples taken from the drainage swale (2AP 3AP, 4AP, 5AP, 6AP). In addition, the highest concentrations of MCL, and 1,1,1-TCA were detected in sample 2AP taken from the outflow point of the discharge pipe. It is likely that the water from the downsport has slightly

diluted the concentrations of MCL and 1,1,1-TCA in samples 3AP, 4AP, 5AP and 6AP. The fact that the same three chemicals were observed in the five samples from the drainage swale combined with the fact that no chemicals were detected in the collection sump is conclusive evidence that no chemicals were discharged to the collection sump during the rainstorm. Furthermore, it is concluded that the chemical concentrations found in the drainage swale are the result of residual concentrations being mobilized from the subsurface piping into the surface rain runoff, not from a recent chemical spill. The fact that the same three chemicals, MCL, 1,1,1-TCA and 1,1-DCA were found in the collection sump on March 4, 1988, before the sump was cleaned out, in concentrations similar to those found in the samples collected from the drainage swale on April 19, 1988 supports the conclusion.

"2. Sampling of surface water in the front collection sump, the rear drainage T and at the discharge point if possible."

"3. Sampling of ponded water in the bermed storage area, if possible."

"5. A commitment to collect samples identified in #2 and #3 above now and after future rains until three complete rounds of sampling are obtained."

As discussed above an additional round of surface water sampling was performed on April 19, 1988. When future rains occur, two additional rounds of sampling and analyses will be performed. Samples will be collected from the areas outlined below and analyzed for EPA priority, and non-priority purgeables using EPA Method 8240 as well as phenols using EPA Method 8040. As discussed above, these two testing methods include the chemicals that have been previously detected in surface water samples at the Jasco facility. The sampling locations include: the bermed storage area, the collection sump, the downsport discharge point, the rear drainage T, the discharge point of the drainage pipe, 10 feet west of the drainage pipe, 100 feet west of the drainage pipe, and if possible, 180 feet west of the drainage pipe.

0000144

"4. Sampling of water in the dry wells, if possible."

On April 22, 1988, the east, west and parking lot dry wells were destroyed.

On April 6, 1988, groundwater samples were obtained from the west dry well using a Teflon bailer and analyzed for EPA priority and non-priority purgeables using EPA Method 8240, total petroleum hydrocarbons as diesel, paint thinner, lacquer thinner and kerosene, and alcohols/acetone. Analysis for phenols was not performed. The results are contained in Appendix B. The following chemicals were detected in groundwater samples from the west dry well: chloroethane at 1.0 ppm, 1,1-DCA at 1.1 ppm, 1,1-DCE at 0.083 ppm, 1,1,1-TCA at 0.540 ppm, diesel at 7.9 ppm, ethanol at 2.5 ppm, and a acetone at 0.04 ppm.

On April 22, 1988, the east, west and parking lot dry wells were destroyed. The following discussion is preliminary, since a technical report documenting the destruction of the three dry wells will be submitted to the CRWQCB by May 31, 1988. Groundwater samples could not be taken from the east and parking lot dry wells. The parking lot dry well did not contain a casing and was filled completely with drain rock. The east dry well contained an insufficient amount of water to obtain groundwater samples. The east and west dry wells were destroyed by redrilling the thirty inch diameter borings with a thirty six inch diameter flight auger. A bucket auger was used within the final portion of the west dry well to remove material saturated with groundwater. The parking lot dry well was destroyed using a 24-inch diameter flight auger. Drilling continued at all three locations until native soil was encountered. One brass liner of soil from each of the dry wells was obtained to confirm that native soil had been encountered. Each of these samples are stored at Wahler Associates' Palo Alto offices. After excavation, each of the borings was pressure grouted to the surface with concrete. After excavation, the soil and drain rock was covered with polyethylene sheeting and later placed in a disposal bin. Before the material was placed in the disposal bin, one soil sample was

taken from each of the piles of excavated material and analyzed for EPA priority purgeables plus MEK and xylenes using EPA Method 8010. No chemicals were detected in the soil samples from the east and parking lot dry wells. The sample from the west dry well contained toluene at 0.098 ppm and xylenes at 0.830 ppm. The chemical analyses results are contained in Appendix B. An additional soil sample from the west dry well was collected on May 3, 1988 and analyzed for purgeable halocarbons and aromatics, including MEK and xylenes using EPA Methods 8010 and 8020. No chemicals were detected above 0.050 ppm, the method detection limit.

"6. A diagram indicating where soil samples will be collected. Restrictions on sampling due to the proximity of the railroad tracks should be clearly indicated."

On April 5, 1988 four additional source identification borings were advanced within the drainage swale. The following discussion is preliminary, since a more detailed discussion of the source identification borings and the soil chemical analysis results will be contained within the evaluation of interim remedial alternatives report due to be submitted to the CRWQCB by May 31, 1988. Borings B-9, B-10, and B-11 were drilled to 21.5 feet, approximately two to three feet above the assumed top of the groundwater table. Soil samples were collected at approximately two, four, six, eleven, sixteen and twenty one feet below ground surface. Boring B-12 was advanced to 6.5 feet. Soil samples were taken at approximately two, four, and six feet. Each of the soil samples was analyzed using EPA Method 8240 (including non-priority purgeables), EPA Method 8080, alcohols/acetone, TPH as lacquer thinner, paint thinner, kerosene and diesel. One of Southern Pacific Transportation's conditions for this investigation was that "No test holes may be constructed nor equipment operated within twenty (20) feet of the center line of the nearest track." (encroachment permit signed on by Wahler Associates on February 3, 1988). It is anticipated that future sampling activities involving heavy equipment will be performed under the provisions of the above described encroachment point. A copy of the encroachment is enclosed as Appendix C.

The amount of preparation time for this proposal does not allow for the preparation of a plan showing the locations of additional near-surface soil samples. The monthly report due to be submitted to the CRWQCB by May 16, 1988 (Monday) will contain this information. The Southern Pacific Transportation Company (SP) will be contacted regarding the permit provisions for near-surface soil sampling on SP property without the use of heavy equipment before the soil sampling will be performed.

"7. A time schedule for implementing the proposal."

As discussed above, the majority of the tasks outlined in the April 22, 1988 letter have been performed. The timing of future episodes of ponded water sampling will depend on when we receive additional rain. If rain does occur on a business day, the ponded water will be sampled at the locations discussed above. If it rains on a weekend or non-business weekday, attempts will be made to mobilize a sampling crew to perform the investigative work. The CRWQCB will be kept informed of details, regarding surface water sampling by telephone as well as in the monthly reports. A detailed description of further near-surface soil sampling on SP property within the drainage swale area as well as a diagram showing the sampling locations will be contained in the MSR due to be submitted by May 15, 1988. As discussed above, the extent and timing of the soil sampling depends on permission being granted by SP. A technical report discussing the results of tasks performed as part of this proposal investigation will be submitted to the CRWQCB no later than July 29, 1988. This final report will address the chemical properties of the chemicals as they relate to the potential migration of chemicals in the subsurface (e.g. soil/waxer partitioning, mobility etc.). This report will also recommend further actions necessary to minimize or control rainfall runoff.

Regarding compliance with CAO No. 87-094, the technical report evaluating interim remedial alternatives will be submitted to the CRWQCB by May 31, 1988. The CRWQCB was notified of this date on April 15, 1988, seven days

before the April 22nd letter submitted to Mr. Max Anthony. The report will satisfy the requirements of provision C.2.e.1 of CAO No. 87-094. The evaluation of interim remedial actions report was not submitted on March 30, 1988 for the following reason. Before the interim remedial alternatives report could be prepared, the chemical plume characterization had to have been completed. The chemical plume characterization work, completed on March 31, 1988, was delayed by the amount of time it took to obtain encroachment permits for monitoring well installation.

As discussed above, steps have been taken to comply with provision C.2.a of CAO 87-094. One of the most significant steps was the destruction of the three dry wells. In compliance with provision C.2.a and the topics outlined in the April 22, 1988 letter, a report describing the destruction of the dry wells will be submitted to the CRWQCB no later than May 31, 1988. Furthermore, an additional technical report which satisfies to the extent possible the requirements outlined in page one and paragraphs one, two, and three of page two of the April 22, 1988 letter will be submitted to the CRWQCB no later than July 29, 1988.

The following paragraph outlines the steps taken over the past several months towards implementing the runoff management plan in compliance with provision C.2.a of CAO No. 87-094. This paragraph will demonstrate that the Jasco project team took the necessary steps to keep the CRWQCB staff notified of progress made and delays that occurred on this phase of the investigation:

November 2, 1987 - Proposal submitted to the CRWQCB outlining implementation of the runoff management plan (RMP) at the Jasco facility.

December 9, 1987 - Letter received from the City of Mountain View asking for sewer flow rate measurements to be performed prior to implementation of the RMP. This caused a delay in implementation of the work program. The CRWQCB also received a copy of this letter.

December 16, 1987 - Monthly report submitted to CRWQCB stating that problems in obtaining an encroachment permit from SP caused a delay in implementing the RMP.

January 15, 1988 - A monthly report was submitted in which the CRWQCB staff was notified of plans to perform sewer flow rate measurements. The CRWQCB staff was also notified that negotiations were continuing with SP regarding issuance of an encroachment permit.

January 26, 1988 - The CRWQCB staff was notified verbally in a meeting at the Jasco facility that sewer flow rate measurements were being collected.

February 3, 1988 - A letter was submitted to the CRWQCB regarding implementation of the RMP. The letter stated that the RMP would be implemented after an encroachment permit was received from SP. In addition, it was stated that the Jasco project team was proceeding with due diligence in attempting to obtain an encroachment permit from SP. Lastly, it was stated that sewer flow rate measurements were still being collected.

February 8, 1988 - In a meeting at the CRWQCB offices in Oakland, an agreement was reached that a deadline for submittal of a new proposal for implementing the RMP was February 11, 1988. Preparation of this new proposal was necessary given the results of the sewer flow rate monitoring. The sewer flow rate monitoring showed that surcharge conditions occurred within the sanitary sewerline.

February 8, 1988 - A proposal was submitted to SP regarding implementation of the RMP on SP property.

February 11, 1988 - In a phone conversation, Mr. Dick Dahllof of SP stated that the RMP proposal had not been received as of yet.

0000144

February 17, 1988 - A letter was sent to SP regarding implementation of the RMP. SP was notified that implementation of the RMP was required by CAO No. 87-094. In addition, a request was made for SP to reach a decision regarding implementation of the RMP was February 29, 1988.

February 17, 1988 - A monthly report was submitted in which the CRWQCB was notified of delays in implementing the RMP caused by problems in obtaining an encroachment permit from SP as well as by the required sewer flow rate measurements.

February 29, 1988 - A proposal was submitted to the CRWQCB staff containing the revised plan for implementation of the RMP. The results of the sewer flow rate measurements were outlined; in addition, it was stated that a removable plug would be placed over the drain pipe outlet within the dry well collection sumps as was also discussed in a phone conversation between Wahler Associates and the CRWQCB staff on February 25, 1988. Furthermore, it was stated that the proposed runoff management system would be interim in nature, and that use of the system would be terminated on April 30, 1988; and that a final system would be implemented during the summer of 1988. It was also stated that an additional proposal would be submitted during the summer of 1988 because the configuration of the final RMP would likely be modified by implementation of the interim remedial program.

March 1, 1988 - The CRWQCB was made aware of progress being made in implementing the RMP at a meeting held at the Jasco facility.

March 10, 1988 - In a phone conversation, Mr. Dick Dahllof of SP stated that the RMP encroachment permit application had not yet been attended to by members of the SP staff because of the large volume of work assigned to the permit staff.

0000144

March 15, 1988 - The CRWQCB staff was notified in a monthly report of progress made regarding implementation of the RMP. In particular, the CRWQCB staff was notified of the March 10, 1988 conversation with SP outlined above. Also, Wahler Associates requested that the CRWQCB write a letter to SP requesting acceleration of the permit process.

March 23, 1988 - Conversation with CRWQCB staff regarding results of ponded water sampling at the Jasco facility.

March 31, 1988 - Conversation with CRWQCB staff exchanging the ponded water split sampling results.

April 4, 1988 - Conversation with CRWQCB staff requesting groundwater samples be taken, if present, from the dry wells.

April 14, 1988 - Conversations with Mr. Thomas Iwamura and Mr. David Zozaya of the SCVWD regarding destruction of the dry wells at the Jasco facility.

April 15, 1988 - A monthly report was submitted in which the CRWQCB staff was notified of the status of implementing the RMP. In particular, the CRWQCB staff was notified that implmentation of the RMP would be postponed until the summer of 1988, since the rainy season was drawing to a close. In addition, the CRWQCB was notified that the evaluation of interim remedial alternatives report would be submitted no later than May 31, 1988.

The paragraphs outlined above demonstrate: that all reasonable and diligent efforts have been undertaken by the Jasco project team to implement the RMP; delays in implementing the RMP have been beyond the control of the Jasco project team; and that the Jasco project team took the necessary steps to keep the CRWQCB staff notified of progress made and the assistance needed from the CRWQCB to minimize the delays that occurred in implementing the RMP.

0000144

If you have any questions or comments regarding the topics outlined in this proposal, do not hesitate to call.

Sincerely,

WAHLER ASSOCIATES

Robert G. Breynaert
Project Manager

F. Homayounfar Ph.D., P.E.
Department Head
Environmental Services

RB:NH:28

TABLE 1

SUMMARY OF SURFACE WATER CHEMICAL
ANALYSIS RESULTS: JASCO CHEMICAL CORPORATION (PPM)

Sampling Location	MCL Action Level 0.04 ppm	1,1,1-TCA Action Level 0.20 ppm	1,1,-DCA Action Level 0.02 ppm
1 AP	0.014	ND(0.0005)	ND(0.0005)
2 AP	0.073	0.047	0.0053
3 AP	0.051	0.043	0.0039
4 AP	0.025	0.024	0.008
5 AP	0.026	0.024	0.0073
6 AP	0.021	0.042	0.0043
7 AP	ND(0.0005)	ND(0.0005)	ND(0.0005)

Explanation

MCL - Methylene Chloride

ND(0.0005) - Chemical not detected at detection limit of 0.0005 ppm

Action Level - California DOHS recommended action levels.

TABLE 1

SUMMARY OF SURFACE WATER CHEMICAL
ANALYSIS RESULTS: JASCO CHEMICAL CORPORATION (PPM)

Sampling Location	MCL Action Level 0.04 ppm	1,1,1-TCA Action Level 0.20 ppm	1,1,-DCA Action Level 0.02 ppm
1 AP	0.014	ND(0.0005)	ND(0.0005)
2 AP	0.073	0.047	0.0053
3 AP	0.051	0.043	0.0039
4 AP	0.025	0.024	0.008
5 AP	0.026	0.024	0.0073
6 AP	0.021	0.042	0.0043
7 AP	ND(0.0005)	ND(0.0005)	ND(0.0005)

Explanation

MCL	-	Methylene Chloride
ND(0.0005)	-	Chemical not detected at detection limit of 0.0005 ppm
Action Level	-	California DOHS recommended action levels.

APPENDIX A

Checked. Amy Chau

Serial Number 053
WA Project Number JCO-1044
Page 1 of 1

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM 900144

Date Sample Shipped 4-19-88
Name of Laboratory Sequoia Labs
Lab Project Manager Scott Cocanour
Turnaround Time 15 days
Report to Bob Braymaert

Collector RG. Braymaert
Affiliation Wahler Associates
Address 1023 Corporation Way PA
Phone (415) 968-6250

Sample Information

Your Sample I.D.	Date Collected	Matrix	Container	Analysis Requested
1AP	4-19-88	H_2O	2 VOA	EPA 8010
2AP	4-19-88	H_2O	2 VOA	EPA 8010
3AP	4-19-88	H_2O	2 VOA	EPA 8010
4AP	4-19-88	H_2O	2 VOA	EPA 8010
5AP	4-19-88	H_2O	2 VOA	EPA 8010
6AP	4-19-88	H_2O	2 VOA	EPA 8010
7AP	4-19-88	H_2O	2 VOA	EPA 8010

Comments 15 day turnaround. Results by May 10. Please include QC Summary and Chromatograms.

Wahler Contact Person Bob Braymaert Phone (415) 968-6250

Chain of Possession

	Relinquished by (Sign. & affiliation)	Date	Time	Received by (Sign. & affiliation)	Date	Time
1.	[signature]	4/19/88	5:15pm	[signature]	4/19	5:20
		/ /			/ /	
2.		/ /			/ /	
		/ /			/ /	
3.		/ /			/ /	
		/ /			/ /	

Wahler Associates

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041453	Water, 1AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS

results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	14
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041453	Water, 1AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041454	Water, 2AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS

results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	73
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	47
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	5.3	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041454	Water, 2AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041455	Water, 3AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	51
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	43
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	3.9	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0300144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041455	Water, 3AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041456	Water, 4AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS

results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	25
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	24
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	8.0	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Scott Cocanour

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041456	Water, 4AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041457	Water, 5AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS

results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	26
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	24
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	7.3	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041457	Water, 5AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041458	Water, 6AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS

results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	.21
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	42
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	4.3	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041458	Water, 6AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number
8041459

Sample Description
Water, 7AP

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	< 0.5
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.5	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Analyzed: 04/29/88
Date Reported: 05/02/88
Project: #JCO-104H

Sample Number	Sample Description
8041459	Water, 7AP

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/19/88
Date Received: 04/19/88
Date Reported: 05/02/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: M. Giles
Date of Analysis: 4/29/88
Method of Analysis: EPA 8010/8020
Detection Limit: 0.5
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8041455	111TCA	42	43	1.2
8041458	111TCA	44	42	2.3

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8040633	111TCA	3.1	3.0	6.2	98

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

PID 04/29/88 11:05:20 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 630 INDEX 1

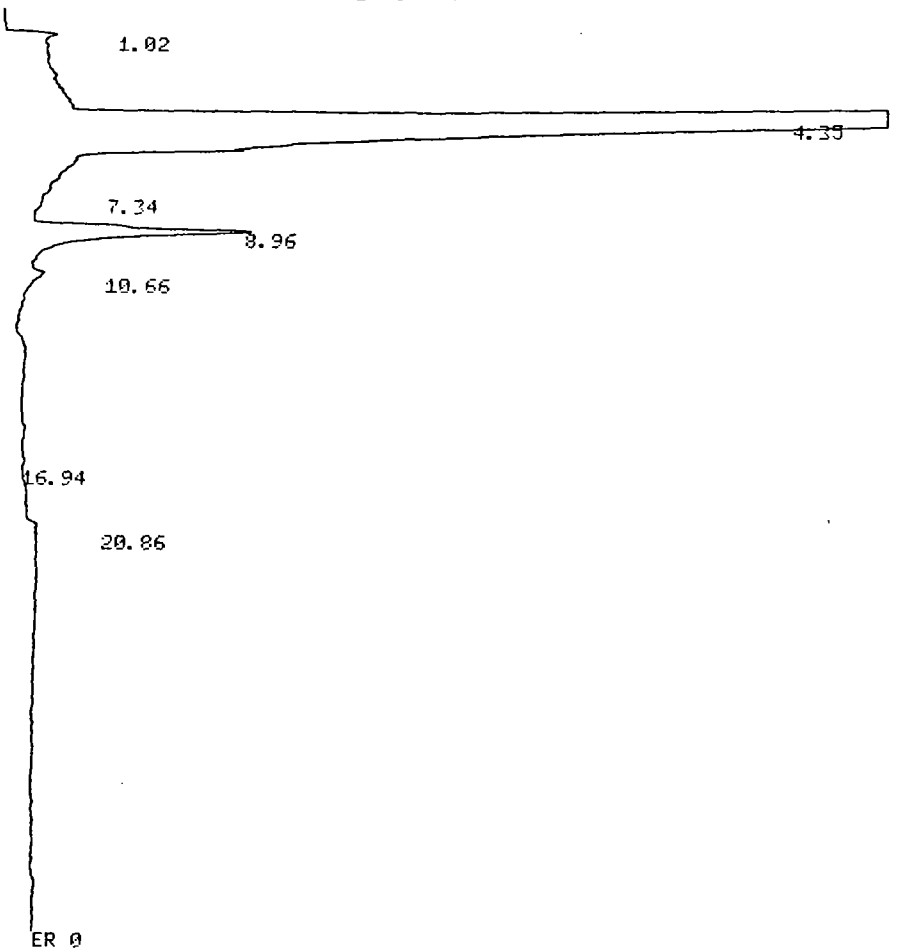
ANALYST: MRG

0000144

Smd 8041453

NAME	PPB	RT	AREA BC	RF
TOTALS	0.			

CHANNEL A INJECT 04/29/88 11:50:44



107

HALL 04/29/88 11:50:44 CH= "A" PS= 1.

FILE 0. METHOD 5. RUN 577 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	1.02	308099	01
2	0.	4.35	60530066	02
3	0.	7.34	19120	03
4	0.	8.96	1499088	01
5	0.	10.66	91414	01
6	0.	16.94	162489	02
7	0.	20.86	405207	03
TOTALS	0.		63015483	

PID 04/29/88 11:50:44 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 631 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	4.52	135220	01
2	0.	20.01	24355	01
TOTALS	0.		159585	

Smd 8042051 Dup

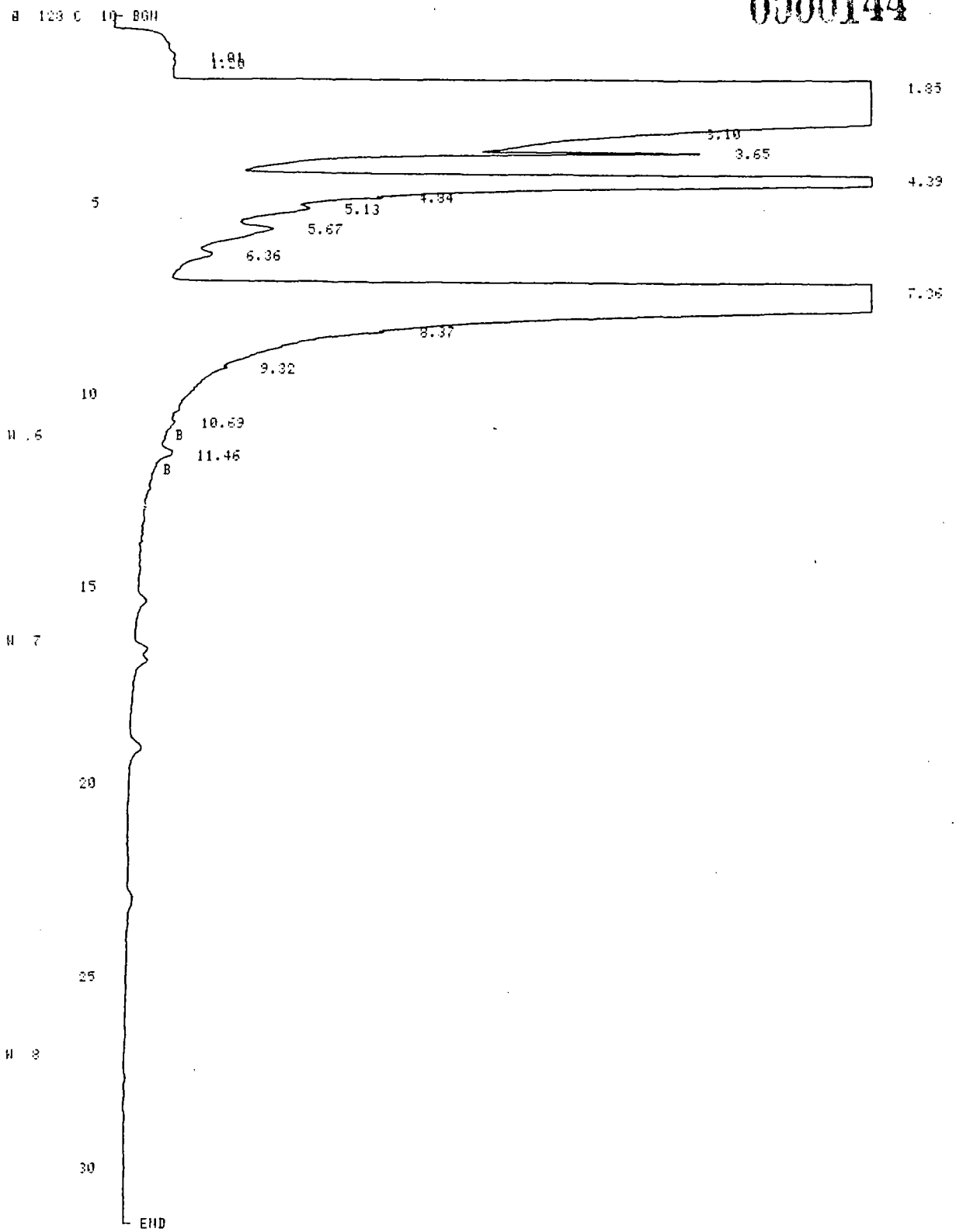
CHANNEL A INJECT 04/29/88 12:38:16

8041454

0000144

RUN 8 11:46 88/04/29

METHOD 1 REGULAR



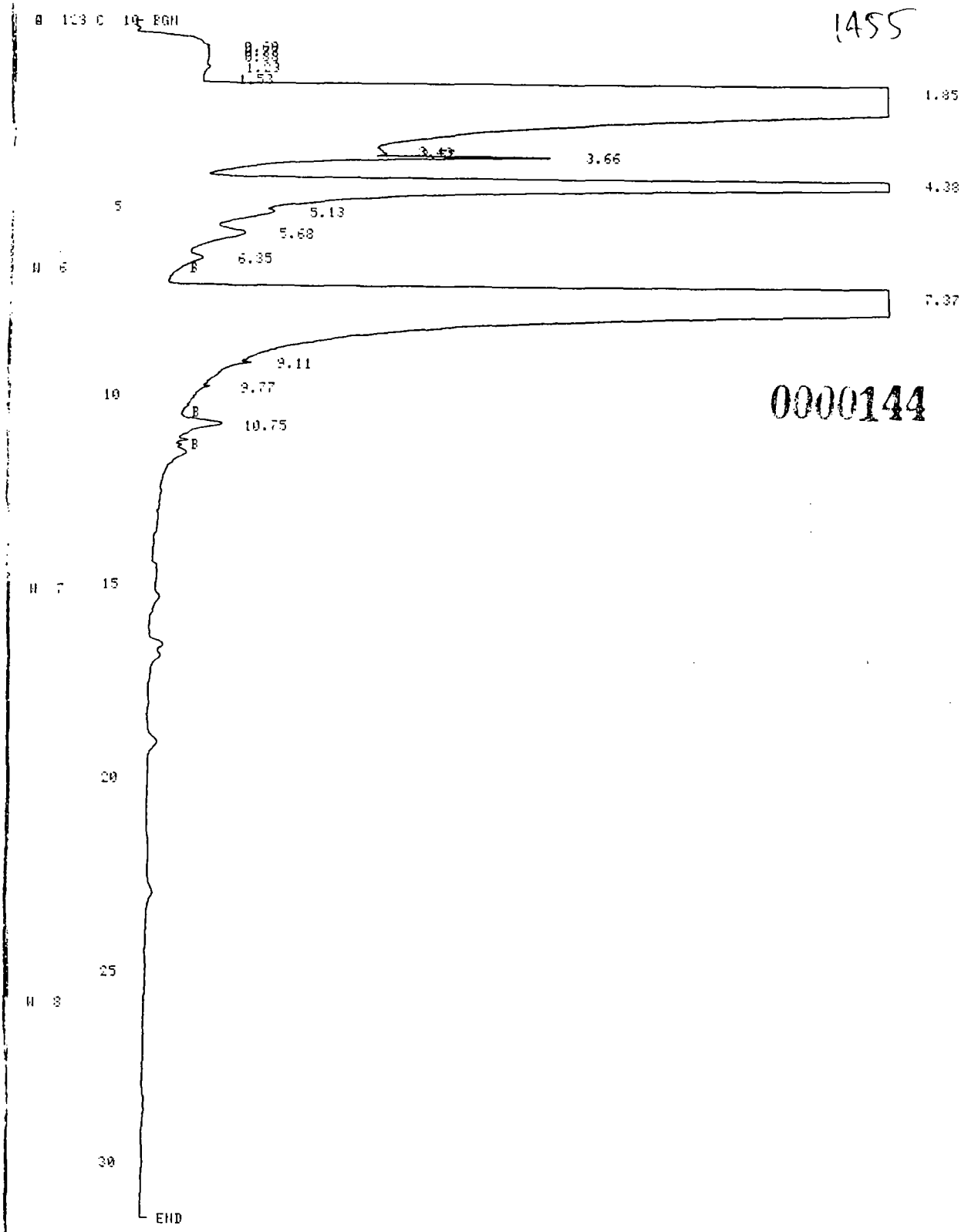
RUN 8 11:46 88/04/29

METHOD 1 REGULAR CALCULATION: %

RT	AREA	BC	AREA %
1.85	21513.2784	H	61.0662
3.65	29.6559	HS	0.0841
4.39	1265.5411	H	3.5914
5.13	8.2369	HS	0.0233
5.67	27.4597	HS	0.0779
6.36	7.8872	HS	0.0223
7.06	12369.6296	H	35.1035

15 PEAKS > AREA/HT REJECT

1455



0000144

RUN 10 13:13 88/04/29

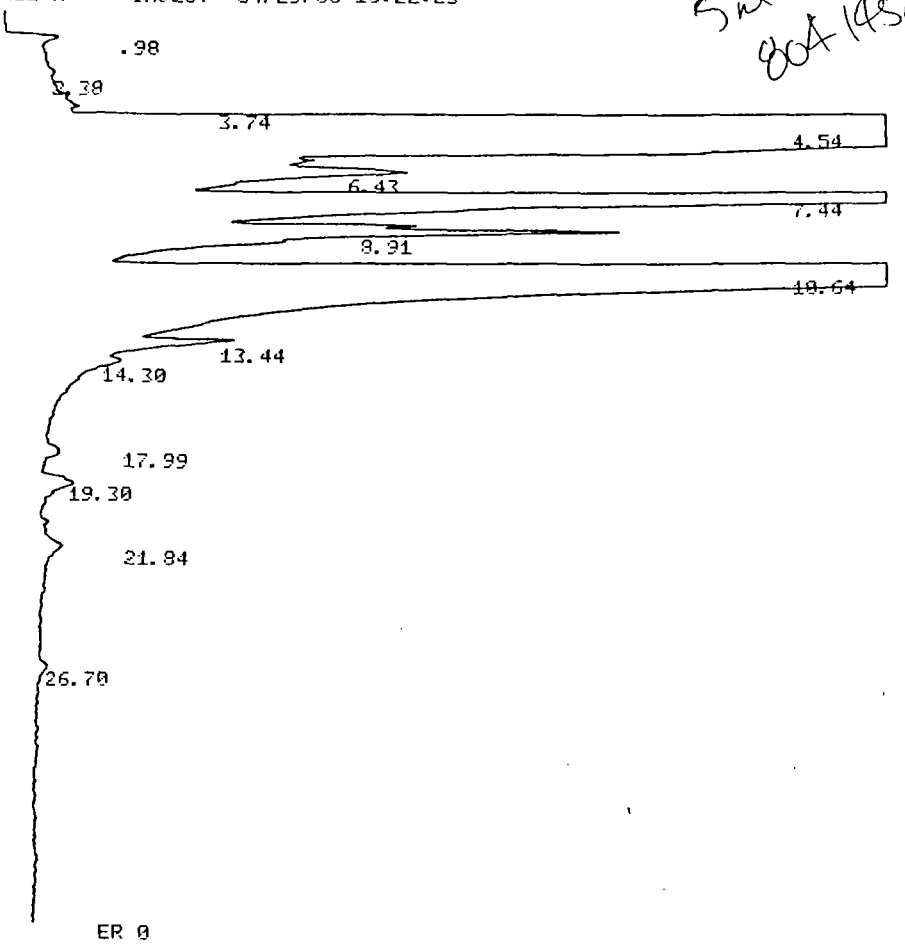
METHOD 1 REGUAR CALCULATION: %

RT	AREA	BC	AREA %
0.68	5.9910	H	0.0217
0.77	3.3584	H	0.0121
0.88	11.1900	H	0.0405
1.23	7.8660	H	0.0285
1.53	3.6867	H	0.0133
1.85	15109.8252	H	54.7650
3.49	4.8708	HS	0.0176
3.57	8.1231	HS	0.0294
3.66	32.9676	HS	0.1194
4.38	928.5331	H	3.3654
5.13	6.2037	HS	0.0225
5.68	20.4758	VS	0.0742
6.35	3.2318		0.0117
7.37	11430.4755	H	41.4293
10.75	11.6431		0.0422

TOTALS 0. 90455

0300144
SW 8004456

CHANNEL A INJECT 04/29/88 10:22:23



104

ER 0

HALL 04/29/88 10:22:23 CH= "A" PS= 1.

FILE 0. METHOD 5. RUN 575 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.98	311780	01	
2	0.	2.38	98080	02	
3	0.	3.74	280080	02	
4	0.	4.54	101094112	02	
5	0.	6.43	4354659	02	
6	0.	7.44	25934754	02	
7	0.	8.91	6464366	02	
8	0.	10.64	83845789	02	
9	0.	13.44	1692606	02	
10	0.	14.3	1137086	03	
11	0.	17.99	84398	01	
12	0.	19.3	290197	01	
13	0.	21.84	100579	01	
14	0.	26.7	40799	01	
TOTALS	0.		225729285		

PID 04/29/88 10:22:23 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 629 INDEX 1

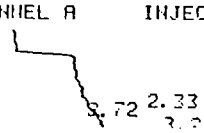
105

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	4.51	17497	01	
2	0.	19.04	35751	01	
TOTALS	0.		53248		

SW DIBLK

CHANNEL A INJECT 04/29/88 11:05:20



FILE 1. METHOD 5. RUN 632 INDEX 1

ANALYST: MRG

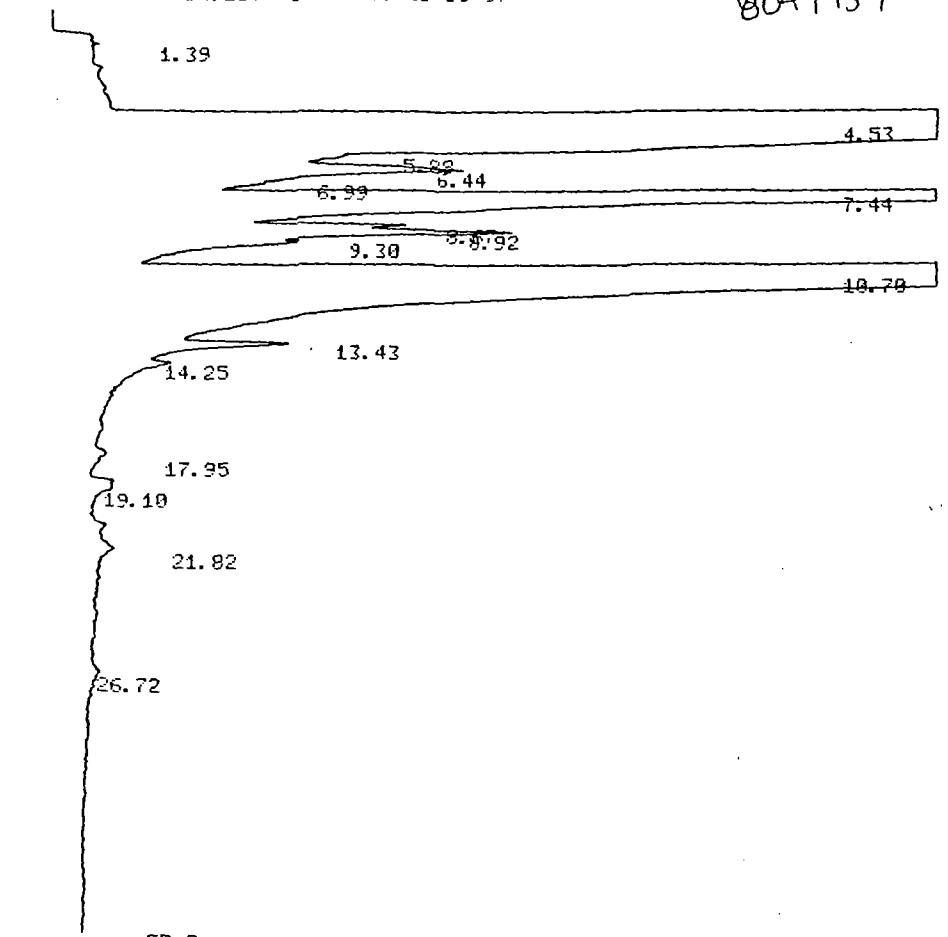
0000144

NAME	PPB	RT	AREA	BC	RF
1	0.	20.01	14977	01	
2	0.	23.16	30699	01	
3	0.	27.66	88117	02	
4	0.	28.72	90080	03	
TOTALS	0.		223873		

109

5 ml
804457

CHANNEL A INJECT 04/29/88 13:35:07



ER 0

HALL 04/29/88 13:35:07 CH= "A" PS= 1.

FILE 0. METHOD 5. RUN 579 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	1.39	4552	01	
2	0.	4.53	103743356	08	
3	0.	5.88	500	05	
4	0.	6.44	922383	05	
5	0.	6.99	1917	05	
6	0.	7.44	23622098	06	
7	0.	8.67	677487	06	
8	0.	8.92	1675423	06	
9	0.	9.3	742404	07	
10	0.	10.7	81335506	06	
11	0.	13.43	1108319	06	
12	0.	14.25	493327	07	
13	0.	17.95	99628	02	
14	0.	19.1	223693	03	
15	0.	21.82	74798	01	
16	0.	26.72	16931	01	
TOTALS	0.		214742322		

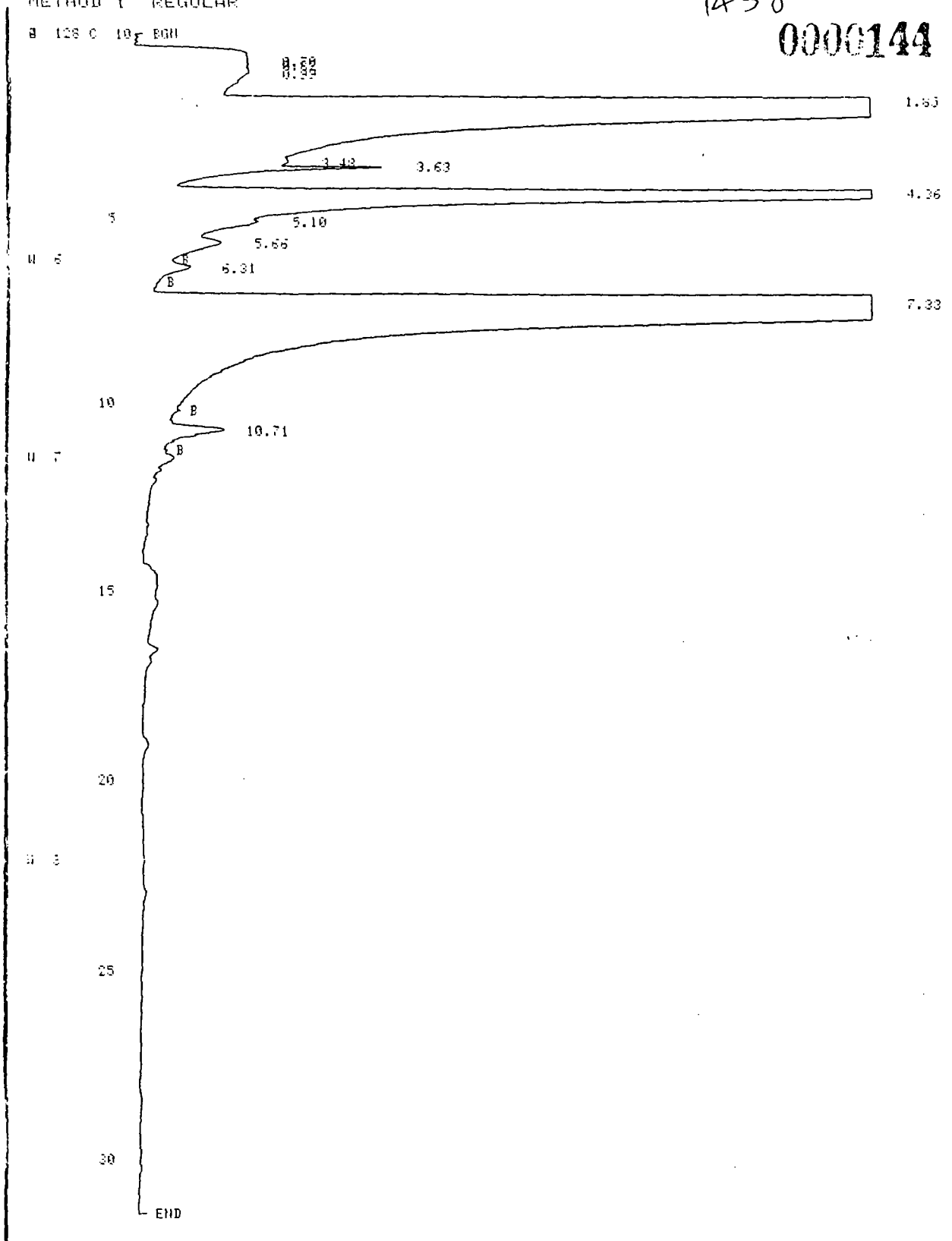
110

PID 04/29/88 13:35:07 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 633 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF



RUN 11 13:50 88/04/29

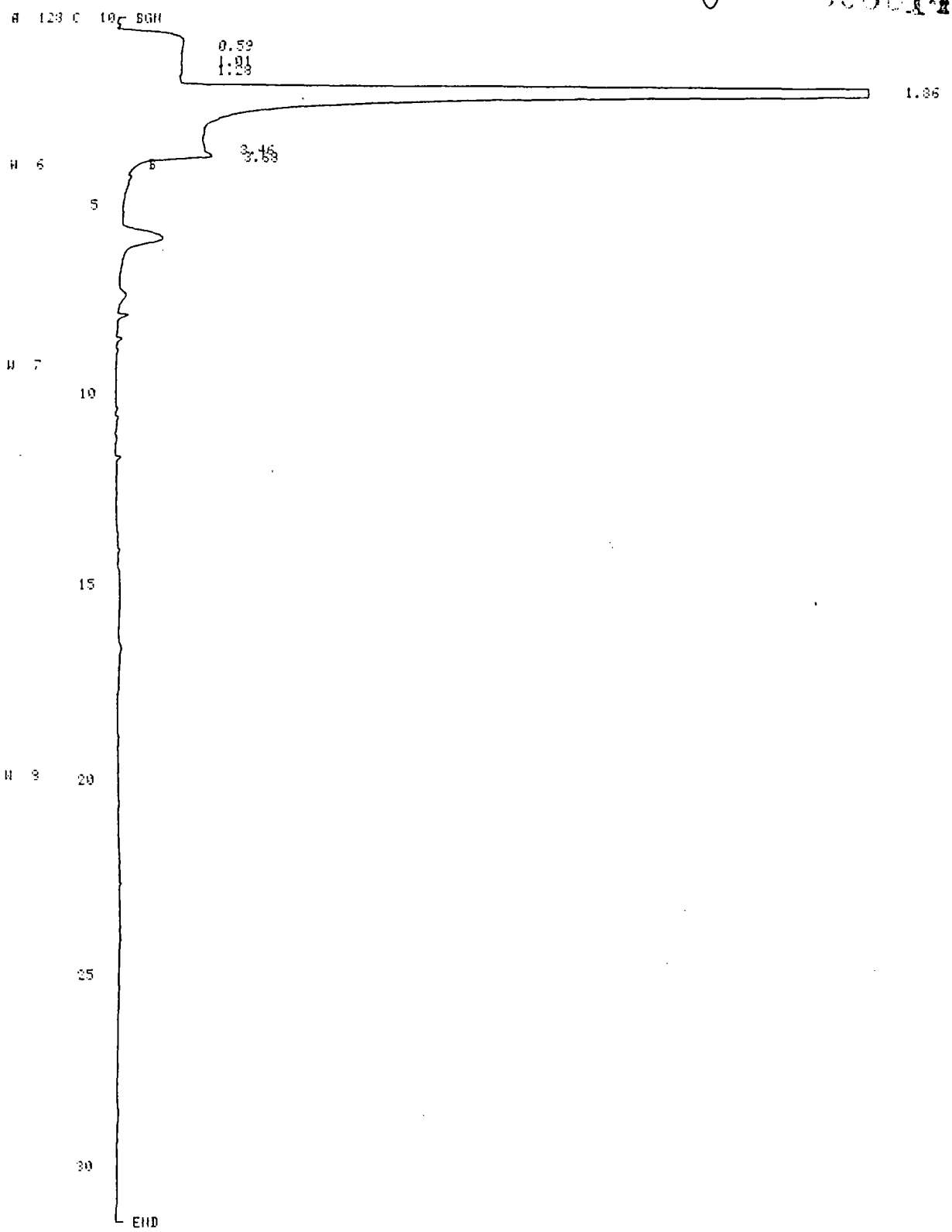
METHOD 1 REGULAR CALCULATION: %

RT	AREA	BC	AREA %
0.70	46.5950	H	0.2547
0.82	16.9071	H	0.0924
0.99	83.2760	H	0.4552
1.85	6115.0982	H	33.4311
3.48	6.8870	HS	0.0376
3.63	22.0795	VS	0.1207
4.36	1013.6240	H	5.5414
5.10	4.2476	HS	0.0232
5.66	11.4424	S	0.0625
7.33	10955.6556		59.8943
10.71	14.8554		0.0812

12 PEAKS) AREA/HT REJECT

RUN 6 10:28 88/04/29

METHOD 1 REGULAR



RUN 6 10:28 88/04/29

METHOD 1 REGULAR CALCULATION: %

PT	AREA	BC	AREA %
0.59	12.5668	H	1.1917
1.01	6.8576	H	0.6503
1.28	3.6183	H	0.3173
1.86	1009.2755	H	95.7153
3.46	5.8519	HS	0.5549
3.68	11.2977	S	1.0714

6 PEAKS) AREA/HT REJECT

105

FILE 1. METHOD 5. RUN 629 INDEX 1

ANALYST: MRG

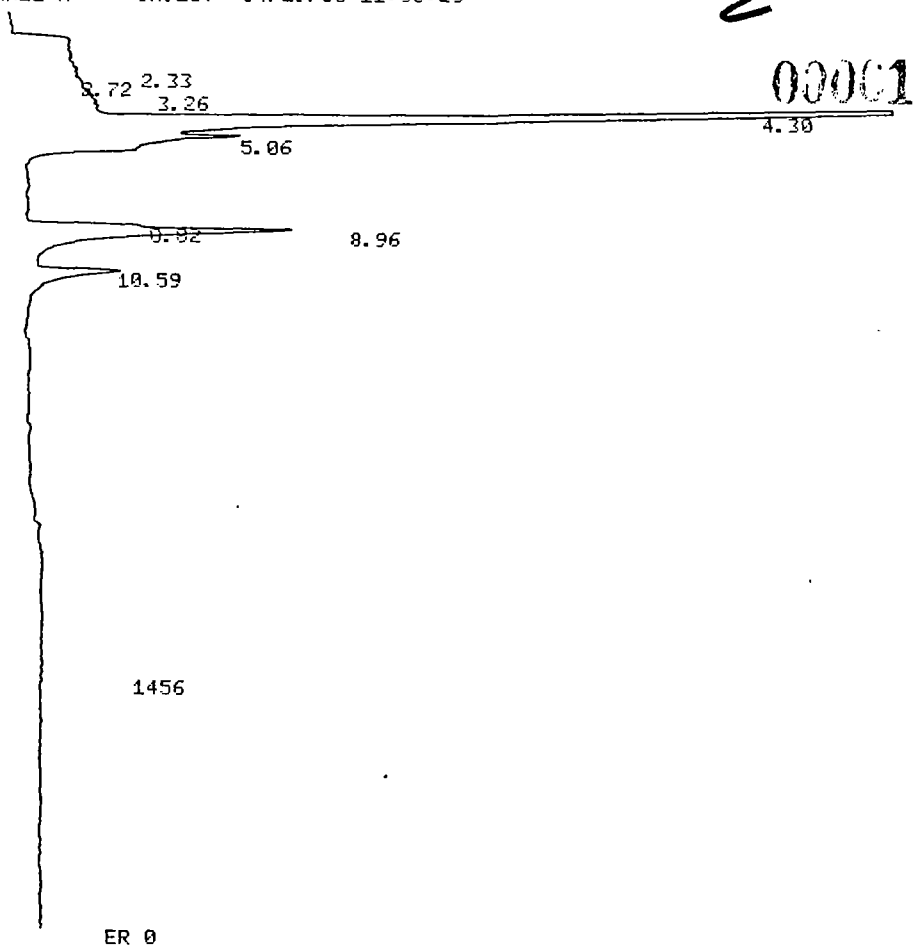
NAME	PPB	RT	AREA BC	RF
1	0.	4.51	17497 01	
2	0.	19.04	35751 01	
TOTALS	0.		53248	

5ml DCBL

≤ 2000

CHANNEL A INJECT 04/29/88 11:05:20

0000144



HALL 04/29/88 11:05:20 CH= "A" PS= 1.

FILE 0. METHOD 5. RUN 576 INDEX 1

ANALYST: MRG

106

NAME	PPB	RT	AREA BC	RF
1	0.	2.33	16633 02	
2	0.	2.72	14101 03	
3	0.	3.26	305574 02	
4	0.	4.3	6564919 02	
5	0.	5.06	1608975 03	
6	0.	8.82	241293 02	
7	0.	8.96	1494706 03	
8	0.	10.59	438055 01	
TOTALS	0.		10684256	

PID 04/29/88 11:05:20 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 630 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
TOTALS	0.			

5ml Boat 1453

CHANNEL A INJECT 04/29/88 11:50:44

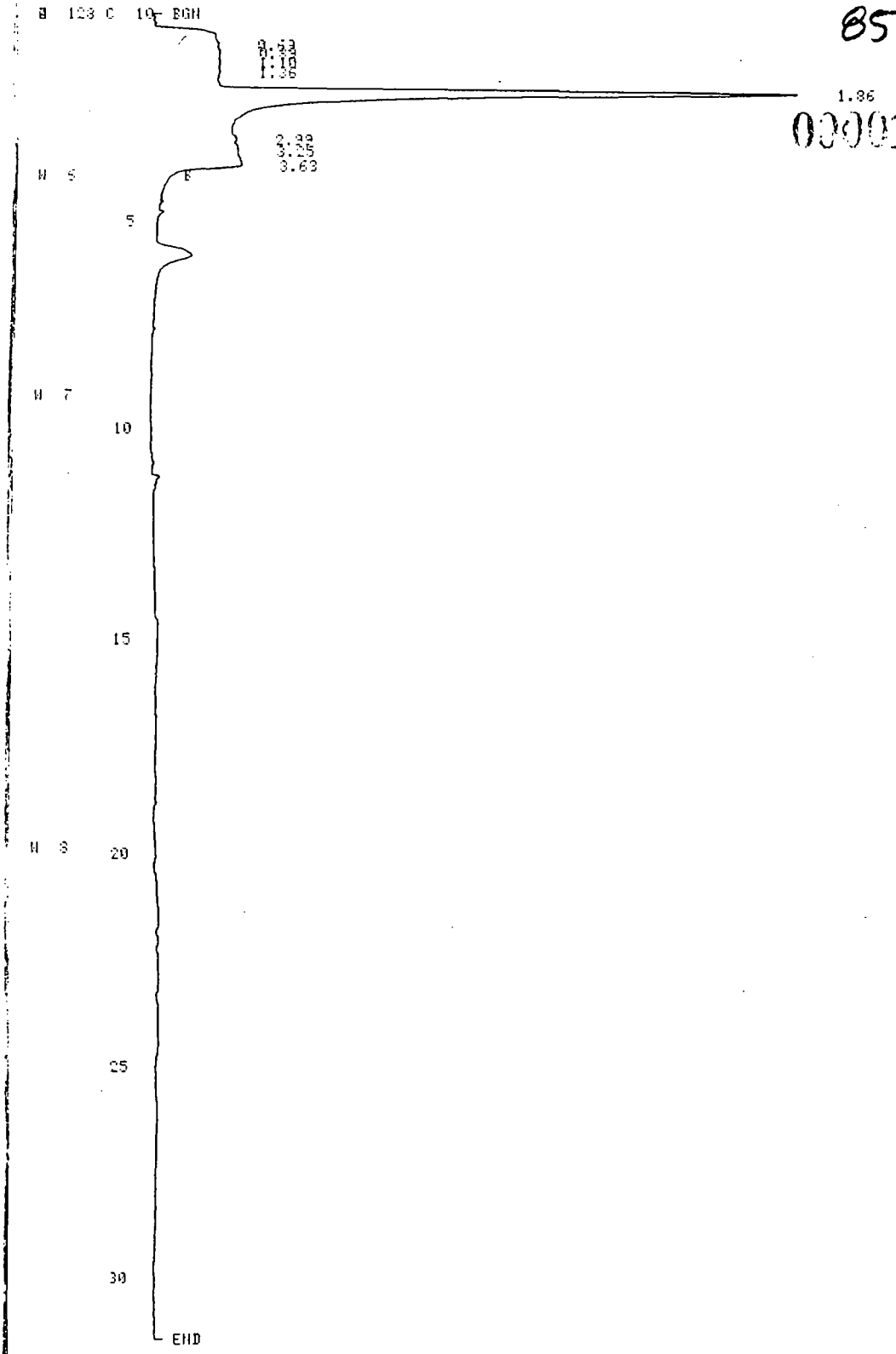
RUN 7 11:05 88/04/29

METHOD 1 REGULAR

Blank

8500

0000144

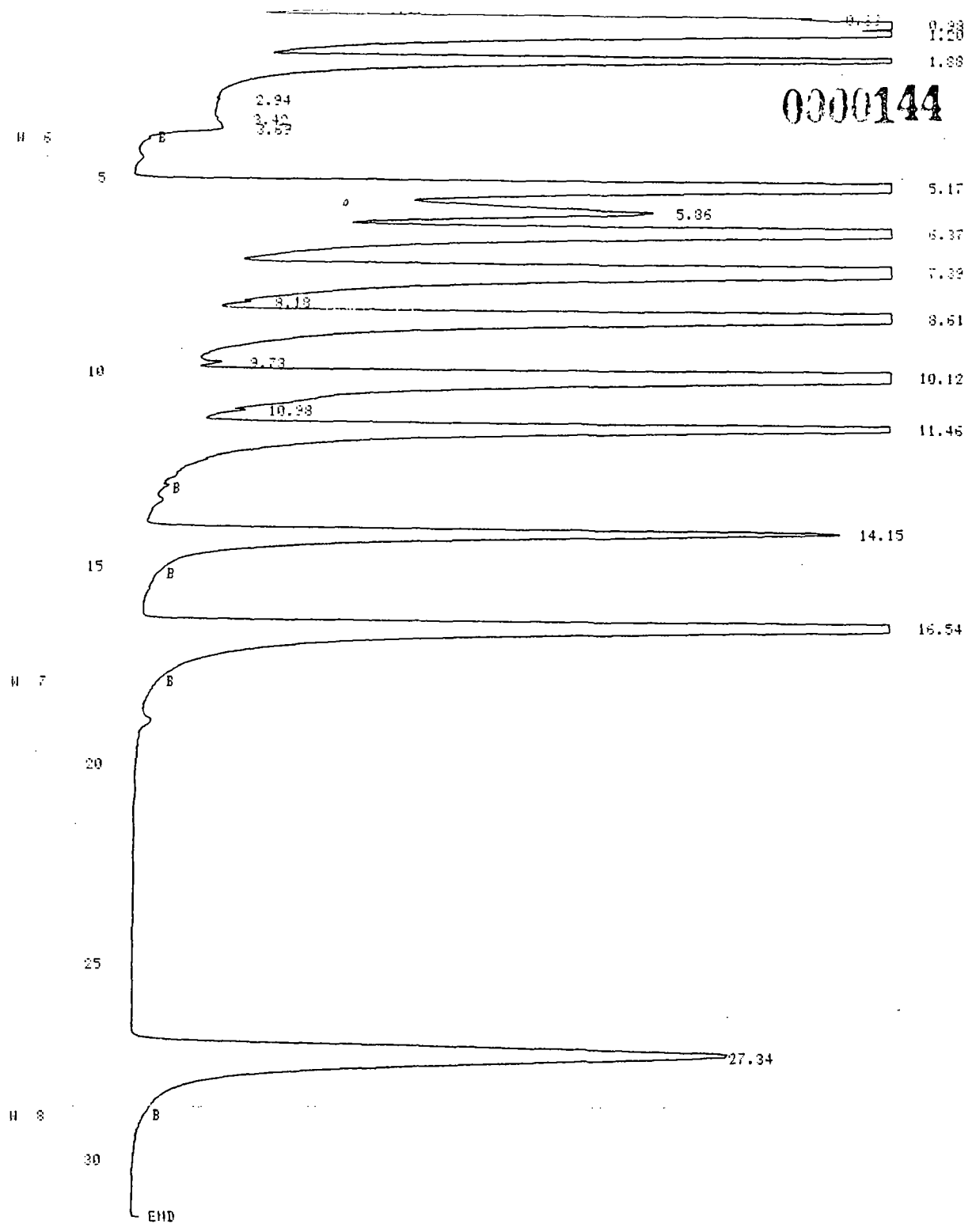


RUN 7 11:05 88/04/29

METHOD 1 REGULAR CALCULATION: %

RT	AREA	BC	AREA %
0.69	0.3370	H	0.1450
0.89	1.2930	H	0.4686
1.10	1.1381	H	0.4157
1.36	0.9415	H	0.3439
1.86	247.0811	H	90.2578
2.99	3.4064	HS	1.2443
3.25	5.8293	HS	2.1296
3.63	13.6731	S	4.9947

8 PEAKS : AREA/HT REJECT



RUN 4 9:13 88/04/29

METHOD 1 REGUAR CALCULATION: %

RT	AREA	BC	AREA %	
0.59	45.0428	H	0.4765	CH_3Cl = 2.7
0.88	126.2109	H	1.3352	CH_3Br = 3.3ppb
0.98	506.7753	H	5.3614	VC = 3.8
1.20	498.5175	H	5.2741	Chloroform = 3.2
1.88	546.0019	H	5.7765	
2.94	6.2530	HS	0.0661	
3.42	8.1618	HS	0.0863	
3.69	17.0606	S	0.1804	
5.17	844.1500	H	8.9307	T12DCE = 4.1
5.86	368.6376	H	3.9000	
6.37	920.4156	H	9.7376	12DCA = 5.0
7.39	1191.6148	H	12.6058	111TCA = 4.5
8.18	0.9900	HS	0.0104	
8.61	967.8124	H	10.2391	$CHBrCl_2$ = 4.4ppb
9.73	14.8611	H	0.1572	
10.12	1119.4945	H	11.8438	T13DCP = 4.43
10.98	1.7689	HS	0.0187	
11.46	587.9672		6.2178	C13DCP = 4.3
14.15	370.4987		3.9197	$CHBr_2$ = 4.1

APPENDIX B

0000144

OK
D Salaices
4-6-88

Serial Number 046
WA Project Number JCO-104H
Page 1 of 1

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Date Sample Shipped 4-6-88
Name of Laboratory Sequoia labs
Lab Project Manager SCOTT COCANOUR
Turnaround Time 15 days
Report to Bob Braynaert

Collector Bob Braynaert / Petrolyn
Affiliation Wahler Assoc
Address 1023 Corporation Way PA.
Phone (415) 968-6250

Sample Information

Your Sample I.D.	Date Collected	Matrix	Container	Analysis Requested
DW(W)	4-5-88	H_2O	2 VOA	EPA 8240 OpenScan
DW(W)	4-5-88	H_2O	2 VOA	Alcohols/Acetone
DW(W)	4-5-88	H_2O	1 Amber	TPHas diesel
DW(W)	4-5-88	H_2O	1 Amber	TPH as Lacquer Thinner
DW(W)	4-5-88	H_2O	1 Amber	TPH as Paint Thinner
DW(W)	4-5-88	H_2O	1 Amber	TPH as kerosene

Comments Provide JCO-104H QC data Package with Chromatograms

Wahler Contact Person Bob Braynaert Phone (415) 968-6250

Chain of Possession

	Relinquished by (Sign. & affiliation)	Date	Time	Received by (Sign. & affiliation)	Date	Time
1.	[signature]	4/6/88	1200	[signature]	4/6/88	1210
		/ /			/ /	
2.		/ /			/ /	
		/ /			/ /	
3.		/ /			/ /	
		/ /			/ /	

Wahler Associates

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/05/88
Date Received: 04/06/88
Date Analyzed: 04/19/88
Date Reported: 04/20/88
Project: #JCO-104H

Sample Number	Sample Description
8040269	Groundwater, DW (W)

PRIORITY POLLUTANTS

PURGEABLES BY GC/MS
results in ppb

Benzene	< 20	1,2-Dichloropropane	< 20
Bromomethane	< 20	1,3-Dichloropropane	< 20
Bromodichloromethane	< 20	Ethylbenzene	< 20
Bromoform	< 20	Methylene chloride	< 100
Carbon tetrachloride	< 20	1,1,2,2-Tetrachloroethane	< 20
Chlorobenzene	< 20	Tetrachloroethene	< 20
Chloroethane	1000	1,1,1-Trichloroethane	540
2-Chloroethylvinyl ether	< 100	1,1,2-Trichloroethane	< 20
Chloroform	< 100	Trichloroethene	< 20
Chloromethane	< 20	Toluene	99
Dibromochloromethane	< 20	Vinyl chloride	< 20
1,1-Dichloroethane	1100		
1,2-Dichloroethane	< 20		
1,1-Dichloroethene	83		
trans-1,2-Dichloroethene	< 20		

Method of Analysis: EPA 8240

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/05/88
Date Received: 04/06/88
Date Analyzed: 04/19/88
Date Reported: 04/20/88
Project: #JCO-104H

Sample Number	Sample Description
8040269	Groundwater, DW (W)

- Open Scan -
NON-PRIORITY POLLUTANTS
PURGEABLES BY GC/MS
results in ppb

No additional peaks > 40 ppb were detected for identification by NBS spectral library.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/05/88
Date Received: 04/06/88
Date Reported: 04/26/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Detection Limit ppb	High Boiling Point Hydrocarbons ppb	
	Groundwater,			
8040269	DW (W)	50	7,900	as Diesel
8040269	DW (W)	50	< 50	as Lacquer Thinner
8040269	DW (W)	50	< 50	as Paint Thinner
8040269	DW (W)	50	< 50	as Kerosene

Method of Analysis: EPA 3510/8015

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/05/88
Date Received: 04/06/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8040269	Groundwater, DW (W)

ANALYSIS

results in ppb

Methanol	< 10
Ethanol	2,500
Acetone	40
Isopropanol	< 10

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

0000144

Serial Number 058
WA Project Number JCO-1044
Page 1 of 1

Checked by Amy Chau

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Date Sample Shipped 4-25-88

Name of Laboratory Sequoia Labs

Lab Project Manager Scott Cocanour

Turnaround Time 24 Hours

Report to Bob Breymaert

Collector Bob Breymaert

Affiliation Wahler Associates

Address 1023 Corporation Way P.A.

Phone (415) 968-6250

Sample Information

Your Sample I.D.	Date Collected	Matrix	Container	Analysis Requested
R-1 PK-DW	4-25-88	SOIL	1 ring	EPA 8010 Plus MEK and Xylenes
R-2 EDW	4-25-88	SOIL	1 ring	EPA 8010 Plus MEK and Xylenes
R-3 WDW	4-25-88	SOIL	1 ring	EPA 8010 Plus MEK and Xylenes

Comments 24 Hour Turnaround - (EPA data packages not necessary on 24 hour turnaround - May can be delivered at later date)

Wahler Contact Person Bob Breymaert Phone (415) 968-6250

Chain of Possession

	Relinquished by (Sign. & affiliation)	Date	Time	Received by (Sign. & affiliation)	Date	Time
1.	[signature]	4/25/88	1:30p	[signature]	4/25/88	1:30
		/ /			/ /	
2.		/ /			/ /	
		/ /			/ /	
3.		/ /			/ /	
		/ /			/ /	

Wahler Associates

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Analyzed: 04/26/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8041760	Soil, R-1, PKDW

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS
results in ppb

Bromomethane	< 50	1,2-Dichloropropane	< 50
Bromodichloromethane	< 50	1,3-Dichloropropene	< 50
Bromoform	< 50	Methylene chloride	< 50
Carbon Tetrachloride	< 50	1,1,2,2-Tetrachloroethane	< 50
Chloroethane	< 50	Tetrachloroethene	< 50
2-Chloroethylvinyl ether	< 50	1,1,1-Trichloroethane	< 50
Chloroform	< 50	1,1,2-Trichloroethane	< 50
Chloromethane	< 50	Trichloroethene	< 50
Dibromochloromethane	< 50	Vinyl chloride	< 50
1,1-Dichloroethane	< 50	1,2-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50	1,4-Dichlorobenzene	< 50
trans-1,2-Dichloroethene	< 50		

Method of Analysis: EPA 8010

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8041760	Soil, #R-1, PKDW

ANALYSIS

results in ppb

Methyl Ethyl Ketone	< 50
Xylenes	< 50

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Analyzed: 04/26/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8041761	Soil, R-2, EDW

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS
results in ppb

Bromomethane	< 50	1,2-Dichloropropane	< 50
Bromodichloromethane	< 50	1,3-Dichloropropene	< 50
Bromoform	< 50	Methylene chloride	< 50
Carbon Tetrachloride	< 50	1,1,2,2-Tetrachloroethane	< 50
Chloroethane	< 50	Tetrachloroethene	< 50
2-Chloroethylvinyl ether	< 50	1,1,1-Trichloroethane	< 50
Chloroform	< 50	1,1,2-Trichloroethane	< 50
Chloromethane	< 50	Trichloroethene	< 50
Dibromochloromethane	< 50	Vinyl chloride	< 50
1,1-Dichloroethane	< 50	1,2-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50	1,4-Dichlorobenzene	< 50
trans-1,2-Dichloroethene	< 50		

Method of Analysis: EPA 8010

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8041761	Soil, #R-2, EDW

ANALYSIS

results in ppb

Methyl Ethyl Ketone	< 50
Xylenes	< 50

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Analyzed: 04/26/88
Date Reported: 04/26/88

Project: #JCO-104H

Sample Number	Sample Description
8041762	Soil, R-3, WDW

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	< 50	1,2-Dichloropropane	< 50
Bromomethane	< 50	1,3-Dichloropropane	< 50
Bromodichloromethane	< 50	Ethylbenzene	< 50
Bromoform	< 50	Methylene chloride	< 50
Carbon tetrachloride	< 50	1,1,2,2-Tetrachloroethane	< 50
Chlorobenzene	< 50	Tetrachloroethene	< 50
Chloroethane	< 50	1,1,1-Trichloroethane	< 50
2-Chloroethylvinyl ether	< 50	1,1,2-Trichloroethane	< 50
Chloroform	< 50	Trichloroethene	< 50
Chloromethane	< 50	Toluene	98
Dibromochloromethane	< 50	Vinyl chloride	< 50
1,1-Dichloroethane	< 50	1,2-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50	1,4-Dichlorobenzene	< 50
trans-1,2-Dichloroethene	< 50		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

0000144

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 04/25/88
Date Received: 04/25/88
Date Reported: 04/26/88
Project: #JCO-104H

Sample Number	Sample Description
8041762	Soil, #R-3, WDW

ANALYSIS

results in ppb

Methyl Ethyl Ketone	< 50
Xylenes	830

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

APPENDIX C

0000144

D. M. Medley
Superintendent
H. C. Ballance
Asst. Superintendent-Oakland
R.J. Svoboda
Division Mechanical Officer-Oakland

Southern Pacific
Transportation Company

1707 Wood Street, Oakland, CA 94607 (415)891-7466

R.D. Walker
Division Engineer
K.B. Derr
Office Engineer
R.V. Hernandez
Asst. Division Engineer

November 3, 1987

File: 925147/31

Wahler Associates
P. O. Box 10023
Palo Alto, Ca. - 94303

Gentlemen:

At your request, the Southern Pacific Transportation Company, herein termed "Railroad", hereby grants permission to Wahler Associates to enter upon Railroad's property in the vicinity of Mountain View, Ca., M.P. E-35.28, for the purpose of drilling and monitoring a test well.

This permission is granted subject to the following conditions:

1. Wahler Associates agrees to release and indemnify Railroad from and against any and all liability, cost and expense for loss of or destruction of or damage to property, or for injury or death of your agents, personnel or employees while on its property pursuant to the permission herein given, whether or not said destruction of or damage to property, or injury to or death of your agents, personnel or employees is caused or contributed to by the presence or operation of Railroad trains, engines, cars or other equipment, structures or facilities of said Railroad or any other party, or by negligence or alleged negligence on the part of any Railroad agent, employee, contractor, subcontractor or invitee except when due to sole active negligence on the part of the railroad, any railroad agent, employee, contractor, subcontractor or invitee.
For the purpose of this section, the term "Railroad" shall include any other railroad company using Railroad's property with Railroad's consent and any affiliate, subsidiary or lessor of Railroad.

2. Any contractor, subcontractor, material supplier or persons providing services to Wahler Associates in conjunction with the access provided to use Railroad property, for the purposes of this agreement, be deemed agent or agents of Wahler Associates.

3. This permit is revocable at the will of Railroad, either in verbal or written form, and if not extended will expire on April 30, 1988.

4. Entry will be gained from other than using Railroad access roads.

5. No test holes may be constructed nor equipment operated within twenty (20) feet of center line of nearest track.

6. Should Railroad request, Wahler Associates agrees to supply Railroad with results of samplings.

7. Wahler Associates shall at its expense comply with all applicable laws, regulations, rules and orders, regardless of when they become or became effective, including without limitation those relating to health, safety, noise environmental protection, waste disposal, and water and air quality, and furnish satisfactory evidence of such compliance to Railroad.

8. Wahler Associates shall supply Certificate of Insurance Policy showing coverage for combined single limit of not less than $1,000,000 bodily injury and property damage liability.

9. Wahler Associates agrees to reimburse Railroad for all reasonable cost and expense incurred by Railroad in connection with said work, including without limitation the expense of furnishing such inspector, watchmen and flagmen as Railroad deems necessary.

10. Wahler Associates shall notify Mr. D. R. Thomas of this office, (415) 891-7457, a minimum of forty-eight (48) hours in advance of entering upon Railroad's property.

Please sign and return the copy of this agreement. When receipt is acknowledged and proper notification has been made, you may commence with the aforementioned project.

Yours truly,

D. K. Medley

D. K. Medley

Enc.

AGREED TO AND ACCEPTED ON THIS

12 day of February, 1987.

Wahler Associates

BY: Jack D. Wahler

TITLE: President